PATENT CLAIMS

1. Tracking system for flat mobile antenna, comprising of:

sensors for angular velocity (1), which sense the rotation of the antenna around its axes;

sensors for measuring the inclination of the antenna toward vertical axis (2);

control block (3), which calculates the necessary corrections of the direction of antenna beam, which is connected to outputs of sensors (1, 2) and with inputs of driving block (4) and block for electronic beam control (5);

at least one motor (7), changing the orientation of the antenna, which is connected with the output of driving block (4) and with antenna panel (8);

block for electronic beam control (5), which is connected with antenna panel (8);

power supply block, which converts the voltage from the electrical network of the vehicle into suitable values for providing power supply to all blocks of the system.

2. A system as claimed in 1, wherein three angular velocity sensors (1a, 1b and 1c) are used, which are collinear to the axes of Cartesian coordinate system, fixed with antenna panel (8).

3. A system as claimed in 2, wherein using the information from sensors (1a, 1b and 1c) a forward coordinate transformation is performed for obtaining necessary corrections of azimuth and elevation of antenna panel (8) as well as reverse coordinate transformation for applying corrections of offsets of angular velocity sensors (1a, 1b, 1c).

4. A system as claimed in 2, wherein axes of two of angular velocity sensors lie in the plane, in which the beam of antenna panel (8) is tilted, while the axis of the third angular velocity sensor is orthogonal to this plane.

5. A system as claimed in 1, wherein antenna panel (8) performs mechanical scanning by one axis, while the antenna beam is positioned by electronic control at fixed position at the other axis, and

the signal strength from two or more positions in a close proximity to direction towards the satellite is used for calculation of correction of offsets of angular velocity sensors (1a, 1b, 1c) and for fine adjustment in orientation of antenna beam by the block for electronic beam control (5).

6. A system as claimed in 5, wherein the block for electronic beam control (5) holds the beam, which is closest to current satellite direction for maximum allowable time, while holding the beam in the neighboring positions is for minimal time, which provides minimum decreasing of average strength of received signal.

7. A system as claimed in 1, wherein an additional correction of offsets of angular velocity sensors (1a, 1b), which axes lie in a plane, coplanar or near coplanar to horizontal plane, is applied.

8. A system as claimed in 7, wherein the output values of angular velocity sensors (1a, 1b), which axes lie in a plane, coplanar or near coplanar to horizontal plane, are integrated for a certain time interval, and when the result from integration is positive the offset of corresponding sensor (1a, 1b) is corrected by a certain step in positive direction or when the result from integration is negative the offset of corresponding sensor (1a, 1b) is corrected by a certain step in a negative direction.

9. A system as claimed in 7, wherein the output values of angular velocity sensors (1a, 1b), which axes lie in a plane, coplanar or near coplanar to horizontal plane, are converted into angular velocities, which vectors lie in the horizontal plane, which angular velocities are integrated for obtaining inclination angles of axes of aforementioned angular velocity sensors, and obtained inclination angles are compared with measurements from inclinometers (2), which sense the inclination of aforementioned axes toward horizontal plane, and the result from this comparison is used for adjustment of offsets of aforementioned angular velocity sensors (1a, 1b).